

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 15537-W0	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 00/ 16835	International filing date (day/month/year) 19/06/2000	(Earliest) Priority Date (day/month/year) 18/06/1999
Applicant BAKER HUGHES INCORPORATED et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :



contained in the international application in written form.



filed together with the international application in computer readable form.



furnished subsequently to this Authority in written form.



furnished subsequently to this Authority in computer readable form.



the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.



the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.



as suggested by the applicant.



because the applicant failed to suggest a figure.



because this figure better characterizes the invention.

3



None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/00/16835

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C02F1/76

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 1 263 916 A (WADDLETON N) 16 February 1972 (1972-02-16)	1,3-8, 13, 15-19,21 22,23
A	the whole document ---	
X	US 4 690 764 A (OKUMURA MUNEHIRO ET AL) 1 September 1987 (1987-09-01)	1,3,4,7, 8
Y	column 7, line 17-25 - line 39-45; figure 9	2,14
A	---	13,15, 16, 18-20,22
Y	US 4 019 983 A (MANDT MIKKEL G) 26 April 1977 (1977-04-26)	2,14
A	column 14, line 17-31; claims 1,5; figures 1,11 ---	4-6,16, 21,22,24
	--- -/-	

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

30 October 2000

Date of mailing of the international search report

07/11/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Gruber, M

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US98/16835

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 51404 A (LIFE TECHNOLOGIES INC) 19 November 1998 (1998-11-19) page 1, line 15-23 page 2, line 23 -page 13, line 28; figure 3	1,4-8,10
A	GB 2 089 476 A (GLOUCHKOW P E I) 26 August 1981 (1981-08-26) the whole document	

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US 00/16835

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C02F1/76

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 1 263 916 A (WADDLETON N) 16 February 1972 (1972-02-16)	X 1, 3-8, 13, 15-19, 21
A	the whole document	22, 23
X	US 4 690 764 A (OKUMURA MUNEHITO ET AL) 1 September 1987 (1987-09-01)	X 1, 3, 4, 7, 8
Y	column 7, line 17-25 - line 39-45; figure 9	Y 2, 14
A		13, 15, 16, 18-20, 22
Y	US 4 019 983 A (MANDT MIKKEL G) 26 April 1977 (1977-04-26)	Y 2, 14
A	column 14, line 17-31; claims 1, 5; figures 1, 11	4-6, 16, 21, 22, 24
	-/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

30 October 2000

Date of mailing of the international search report

07/11/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Gruber, M

INTERNATIONAL SEARCH REPORT

In: International Application No

PCT/US 00/16835

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 51404 A (LIFE TECHNOLOGIES INC) 19 November 1998 (1998-11-19) page 11, line 15-23 page 12, line 23 -page 13, line 28; figure 3	1,4-8,10
A	GB 2 069 476 A (GLOUCHKOW P E I) 26 August 1981 (1981-08-26) the whole document	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/16835

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 1263916	A	16-02-1972	NONE	
US 4690764	A	01-09-1987	CA 1309193 A	20-10-1992
			CN 86106673 A, B	15-04-1987
			DE 3684218 A	16-04-1992
			EP 0218253 A	15-04-1987
			JP 2101805 C	22-10-1996
			JP 8004731 B	24-01-1996
			JP 62168526 A	24-07-1987
			KR 9005507 B	30-07-1990
US 4019983	A	26-04-1977	AT 343560 B	12-06-1978
			AT 771875 A	15-09-1977
			AU 8526775 A	07-04-1977
			BR 7506614 A	17-08-1976
			CA 1055623 A	29-05-1979
			DE 2545101 A	22-04-1976
			DK 456575 A	11-04-1976
			ES 441444 A	16-09-1977
			FR 2287420 A	07-05-1976
			GB 1500317 A	08-02-1978
			IL 48123 A	30-04-1978
			IT 1047612 B	20-10-1980
			JP 1054022 C	23-07-1981
			JP 51046747 A	21-04-1976
			JP 55045273 B	17-11-1980
			NL 7511951 A	13-04-1976
			NO 753431 A, B,	11-05-1976
			SE 430595 B	28-11-1983
			SE 7511341 A	12-04-1976
			BE 834403 A	02-02-1976
			ZA 7506083 A	29-09-1976
WO 9851404	A	19-11-1998	US 6004025 A	21-12-1999
			AU 7494898 A	08-12-1998
GB 2069476	A	26-08-1981	NONE	

GENERAL POWER OF ATTORNEY
(for several international applications filed under the Patent Cooperation Treaty)

(PCT Rule 90.5)

The undersigned person(s):

(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

BAKER HUGHES INCORPORATED
3900 Essex Lane Suite 1200
Houston, Texas 77027
United States of America

hereby appoints (appoint) the following person as:



agent



common representative

Name and address

(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

RIDDLE, J. Albert, Reg. No. 33,445; Carson Matt W., Reg. No. 33,662;
LITTLEFIELD, Stephen A., Reg. No. 27,923; SPRINGS, Darryl M., Reg. No.
24,799; POLACEK, Michael, Reg. No. 32,749; WELBORN, Brian S., Reg. No.
39,065.

BAKER HUGHES INCORPORATED
3900 Essex Lane Suite 1200
Houston, Texas 77027
United States of America

to represent the undersigned before



all the competent International Authorities



the International Searching Authority only



the International Preliminary Examining Authority only

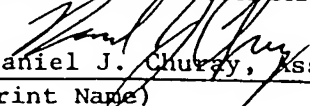
in connection with any and all international applications filed by the undersigned with the following Office
United States Patene and Trademark Office

as receiving Office

and to make or receive payments on behalf of the undersigned.

Signatures of the applicant(s) (where there are several persons, each of them must sign; next to each signature, indicate the name of the person signing and the capacity in which the person signs, if such capacity is not obvious from reading this power):

BAKER HUGHES INCORPORATED


Daniel J. Churay, Assistant Secretary
(Print Name)

Date:

Oct. 31, 2000